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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,297

07/13/2006

Harald Faber

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EXAMINER

WOOD, JONATHAN K

ART UNIT

PAPER NUMBER

4137

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,297	<b>Applicant(s)</b> FABER ET AL.	
	<b>Examiner</b> JONATHAN WOOD	<b>Art Unit</b> 4137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 10-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/13/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 1, 26, and 40. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A

COMPACT DISC.

(f) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2, and 10-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the term 'hard as metal' in line 14 of claim 1 is ambiguous in scope. Appropriate correction is required. For purposes of examination, examiner interprets the term to mean 'made of metal'.

4. Claim 1 recites the limitation "the dosing chambers" in lines 12-13. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend to 'a dosing chamber' or define a dosing chamber earlier in the claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 4137

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 2, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,978,252 to *Sperber* (*Sperber*) in view of US Patent No. 4,844,101 to *Hirsch et al* (*Hirsch*) and US Patent No. 3,708,890 to *Weisselberg* (*Weisselberg*).

In Reference to Claim 1

*Sperber* teaches:

A cellular wheel sluice (rotary pocket feeder assembly 66) constructed as a blow through sluice, particularly for dosing secondary fuels, comprising a supply chute (chute 14) and there below a horizontally arranged cellular wheel (cylindrical body 68) provided with radial cellular webs (vane members 74), which comprises blow-in and blow-out holes (inlet 82 and outlet 84, respectfully) arranged in the housing below the axis of the cellular wheel within the rotational area of the cellular wheel webs and positioned opposite each other in facing sides of the housing (Figure 4, col. 5, ll. 8-17), and in that the cellular wheel webs comprise gap seals (seal members 78) positioned in their radial end zones (col. 4, ll. 66-68).

*Sperber* fails to disclose:

The area of the blow-in hole having an injection nozzle, said injection nozzle blowing transport air into the dosing chambers formed by the cellular wheel webs; and the gap seals being made of metal.

Art Unit: 4137

*Hirsch* teaches:

A cellular wheel sluice (cellular wheel sluice 16), characterized in that an injection nozzle (nozzle opening 18) is integrated in the area of the blow-in hole (Figure 2) said injection nozzle blowing transport air into the dosing chambers (col. 4, ll. 51-55) formed by the cellular wheel webs (vanes 16c) (col. 5, ll. 42-53).

*Weisselberg* teaches:

A cellular wheel sluice (rotary air lock apparatus, col. 2, ll. 51-52) which has gap seals (blade segments 162 and 164) made of metal (col. 5, ll. 61-63).

It would have been obvious to one having ordinary skill in the art at the time of the invention to have manufactured the feeder assembly of *Sperber* with the injection nozzle structure of *Hirsch* in order to avoid the Coanda effect (*Hirsch*, col. 5, ll. 5-9). It would have been further obvious to one having ordinary skill in the art at the time of the invention to replace the gap seals of *Sperber* with the blade segments of *Weisselberg* which are of stainless steel material in order to provide a seal of the requisite flexibility and durability, while keeping frictional forces between the blade and the housing at a minimum (*Weisselberg*, col. 5, ll. 63-67).

#### In Reference to Claim 2

*Sperber* as modified by *Hirsch* and *Weisselberg* teaches:

The cellular wheel sluice of claim 1 (see rejection of claim 1 above), characterized in that the injection nozzle (*Hirsch*, nozzle opening 18) is

Art Unit: 4137

set-in coaxially and inwardly in a blow-in pipe socket (*Hirsch*, distributing chamber 20) secured to the blow-in hole (*Sperber*, inlet 82), said injection nozzle causing a reduction of the blow-in cross-section in the area of the blow-in opening relative to the blow-in pipe cross-section (*Hirsch*, Figure 2).

In Reference to Claim 10

*Sperber* as modified by *Hirsch* and *Weisselberg* teaches:

The cellular wheel sluice of claim 1 (see rejection of claim 1 above), characterized in that the blow-in hole (*Sperber*, inlet 82) and the blow-out hole (*Sperber*, outlet 84) are positioned axially opposite each other in the housing facing surfaces (*Sperber*, Figure 1, col. 5, ll. 8-17), and in that the cross-sectional area at least of the blow-out hole has about the cross-section of the dosing chamber (pocket 80) (*Sperber*, Figure 4).

In Reference to Claim 11

*Sperber* as modified by *Hirsch* and *Weisselberg* teaches:

The cellular wheel sluice of claim 1 (see rejection of claim 1 above), characterized in that the injection nozzle (*Hirsch*, nozzle opening 18) is constructed as a pipe shape (*Hirsch*, Figure 2) and comprises a nozzle opening having a diameter corresponding, at the most, to one half of the median dosing chamber diameter (*Hirsch*, Figure 2).

In Reference to Claim 12

*Sperber* as modified by *Hirsch* and *Weisselberg* teaches:

The cellular wheel sluice of claim 1 (see rejection of claim 1 above), characterized in that the gap seals are constructed as separate cutting edges (*Weisselberg*, blade segments 162 and 164) made of a spring steel or other low wear steel alloy (*Weisselberg*, col. 5, ll. 61-63) and that they are exchangeably secured to the cellular wheel webs (*Weisselberg*, col. 5, ll. 1-15).

7. Claim 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Sperber* in view of *Hirsch* and *Weisselberg* as applied to claims 1 and 12 above, and further in view of the Translation of Patent No. EP0505707 to *Motan* (*Motan*).

In Reference to Claim 13

*Sperber* as modified by *Hirsch* and *Weisselberg* teaches:

The cellular wheel sluice of claim 12 (see rejection of claim 12 above).

*Sperber* as modified by *Hirsch* and *Weisselberg* fails to disclose:

The cellular wheel sluice wherein a counter cutting blade is provided in the supply chute parallel to the cutting edges which pass by the counter cutting edge with a small spacing and in an opposing alignment.

*Motan* teaches:

A cellular wheel sluice (cell wheel 2) wherein a counter cutting blade (plough 8) is provided in the supply chute parallel to the cutting edges (inherently parallel at some point during rotation of the wheel) which



Art Unit: 4137

pass by the counter cutting edge with a small spacing and in an opposing alignment (Figures 4-6).

It would have been obvious to one having ordinary skill in the art at the time of the invention to have manufactured the cellular wheel sluice of *Sperber* as modified by *Hirsch* and *Weisselberg* with the plough of *Motan* in order to prevent blocking of the cell wheel by incoming particulate (*Motan*, Page 4, line 26).

In Reference to Claim 15

*Sperber* as modified by *Hirsch* and *Weisselberg* teaches:

The cellular wheel sluice of claim 12 (see rejection of claim 12 above).

*Sperber* as modified by *Hirsch* and *Weisselberg* fails to disclose:

The cellular wheel sluice characterized in that the cell wheel webs with the cutting edges are secured to the cellular wheel core to extend at a slant to the axial direction or with a slight helix.

*Motan* teaches:

A cellular wheel sluice (cell wheel 2) wherein the cell wheel webs (cell wheel bars 3, 4) extend at a slant from the cell wheel (Figure 5).

It would have been obvious to one having ordinary skill in the art at the time of the invention to have incorporated the teaching of *Motan* to slant the cellular wheel webs when manufacturing the cellular wheel sluice of *Sperber* as modified by *Hirsch* and *Weisselberg* to enhance the sealing ability of the webs and corresponding seal gaps.

In Reference to Claim 16

Art Unit: 4137

*Sperber* as modified by *Hirsch*, *Weisselberg*, and *Motan* teaches:

The cellular wheel sluice of claim 13 (see rejection of claim 13 above), characterized in that the counter cutting blade (*Motan*, plough 8) is arranged at a slant to the axial direction of the straight cellular wheel webs (*Motan*, Figure 6).

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Sperber* in view of *Hirsch* and *Weisselberg* as applied to claim 1 above, and further in view of US Patent No. 5,341,966 to *Blankmeiser* et al. (*Blankmeiser*).

*Sperber* as modified by *Hirsch* and *Weisselberg* teaches:

The cellular wheel sluice of claim 1 (see rejection of claim 1 above).

*Sperber* as modified by *Hirsch* and *Weisselberg* fails to disclose:

A cellular wheel sluice characterized in that the housing section is provided with a wear bushing on the cylinder shaped inner wall and at the facing sides with a wear lining which are made of a spring steel material or of a low wear steel alloy.

*Blankmeiser* teaches:

A cellular wheel sluice (col. 2, line 60) having a wear resistant material 18 placed on the stationary walls of the sluice (col. 3, ll. 17-20).

The wear resistant material is described as a wear resistant metal (col. 3, ll. 16-17).

It would have been obvious to one having ordinary skill in the art at the time of the invention to have applied the teaching of *Blankmeiser* to use a wear resistant metal

Art Unit: 4137

material on the stationary surfaces of a cellular wheel sluice when manufacturing the cellular wheel sluice of *Sperber* as modified by *Hirsch* and *Weisselberg* in order to reduce wear of the materials sliding against one another (*Blankmeiser*, col. 3, ll. 24-28). Stationary surfaces on the cellular wheel sluice of *Sperber* as modified by *Hirsch* and *Weisselberg* includes both the cylinder shaped inner wall and the facing sides of the cellular wheel sluice.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. Patent No. 7,419,358 B2 to *Heep* discloses a cellular wheel sluice with replaceable gap seals similar to those recited in claim 12.
- U.S. Patent No. 5,829,649 to *Horton*, U.S. Patent No. 6,109,488 to *Horton*, and U.S. Patent No. 4,411,390 to *Woten* disclose similar blow through cellular wheel sluices like that of the invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN WOOD whose telephone number is (571)270-7422. The examiner can normally be reached on Monday through Friday, 7:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Bomberg can be reached on (571)272-4922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 4137

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JKW/

Examiner, Art Unit 4137

/Kenneth Bomberg/

Supervisory Patent Examiner, Art Unit 4137